

# LESSON 4

**MACHINE DAY**

# SAFETY IS KEY!

- Always wear goggles while in the shop
- While operating machinery, ALWAYS HAVE A PARTNER!
- Tie up your hair
- Do not wear loose clothing
- Ask a mentor to help before using a machine you've never touched before
- No running in the shop!

# DRILL PRESS

- Used for drilling holes in wood and metal
- Allows for more accurate and faster drilling



# BANDSAW

- Used for cutting curves in metal and wood
- Cuts accurately and quickly
- High speed for wood, low speed for metal
- If cutting long pieces, your partner should be at the other side to hold the other end of the piece
- Lower the guard after using



# CHOP SAW

- Quick and easy to use
- Angle of clamp can be changed
- Sparks will fly if cutting steel
- Quite loud!



# BELT SANDER

- Used for creating smooth surfaces on wood and metal
- Use vise grip to sand small pieces
- Be careful of hot edges after sanding metal



# TABLE SAW

- Used to cut long, straight pieces of material
- If you need it to cut pieces that the bandsaw cannot, ask a mentor for help
- Stand clear of the table saw when it is in use!



# LATHE

- The machine that can make itself!
- Tool rotates to cut, sand, drill, etc...
- Examples: a hex shaft can be made into a round shaft; a hole can be drilled through center of shaft
- Use oil to avoid breaking something



- Measurements can be made VERY precisely



# MILL

- Can drill holes precisely in relation to each other
- Can also cut slots
- Examples: drill bearing holes, motor mounting holes, slots for chassis
- You can make your own chassis plates with this machine



# A NOTE:

- DO NOT use gloves when operating the drill press or lathe, as the fabric could get caught in the bit.
- DO NOT use gloves when operating the sander
- ALWAYS keep long hair tied back in the shop

REMEMBER TO BE SAFE!